REMARKS

This is intended as a full and complete response to the Final Office Action dated January 28, 2004, having a shortened statutory period for response set to expire on April 28, 2004. Please reconsider the claims pending in the application for reasons discussed below.

In the Advisory Action mailed March 19, 2004, the Examiner states that Applicants' contention that the Examiner erroneously asserts a response was filed May 22, 2003 to the Advisory Action mailed on May 7, 2003 is not persuasive because the PALM report at least as printed out on 3/2/04 clearly shows what the Examiner stated is correct. As Applicants do not have access to the PALM report referred to by the Examiner, Applicants cannot comment on the contents of the PALM report or the accuracy of the PALM report. However, the PALM report cannot alter the filing date or content of any document submitted by Applicants, and the Examiner should have responded based on the actual documents.

Claims 1, 5-8, 16, 18, and 21-38 remain pending in the application and are shown above. Claims 1, 5-8, 16, 18, and 21-38 are rejected by the Examiner. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 1, 5-8, 16, 18, and 21-38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Grill* (U.S. Patent No. 6,312,793) in view of *Scholsky, et al.* (U.S. Patent No. 5,010,166). Applicants respectfully traverse the rejection.

In the Advisory Action mailed March 19, 2004, the Examiner states:

"Applicants' first substantive argument with respect to claim 1 that the teachings of *Scholsky* should be limited to the ionic polymerization step that may occur in a low dielectric constant media or solvent is not correct because one skilled in the art would understand the media of low dielectric constant to mean the low dielectric constant field and not resist it to a medium or solvent. This is further verified by Applicants' specification Background of the invention section pages 2-4 and specifically paragraphs [0006] to paragraph [0009] wherein reference is made to prior art reference WO 99/41423 which describes a method and apparatus for depositing a low dielectric constant film by reaction of an organosilicon compound and an oxidizing gas therefore

one skilled in the art can only conclude that *Scholsky's* teachings including the specific mention of the low dielectric constant media are sufficient to show use of the polymers therein in a low k dielectric film."

Applicants note that the Examiner apparently recognizes that *Scholsky's* only reference to a low dielectric constant is with respect to a low dielectric constant media. Applicants submit that the Examiner has not provided any evidence that the description of a low dielectric constant media in *Scholsky, et al.* makes the coatings of *Scholsky, et al.* inherently low dielectric constant films. Furthermore, regardless of the dielectric constant of the coatings of *Scholsky, et al.*, *Scholsky, et al.* and *Grill* describe substantially different film-forming processes that alone, or in combination, do not teach or suggest the instantly claimed methods. *Scholsky, et al.* provides a solvent-based process of depositing polymeric coatings from precursors that are not taught or suggested to contain silicon, while *Grill* provides a vapor deposition process in which a precursor mixture including silicon is reacted with an oxidizing gas to deposit a silicon-containing, multi-phase film. Applicants submit that there is no motivation or suggestion in *Grill* or *Scholsky, et al.* or the combination of *Grill* and *Scholsky, et al.* of using *Scholsky, et al.'s* furfuryl, furfuryloxy, or neopentyl compounds in the process of *Grill* to form a low dielectric constant thermoset coating. Applicants maintain that there is no suggestion or motivation in the combination of *Scholsky, et al.* and *Grill* to use compounds provided in *Scholsky, et al.* as components of a polyol polymer in the silicon-containing, low dielectric constant multi-phase film of *Grill.*

Therefore, *Grill* in view of *Scholsky, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film, comprising introducing a siloxane comprising two or more silicons and from two to five carbons bonded to the silicons into a processing chamber, introducing at least one oxidizable chemical comprising a member selected from the group consisting of furfuryl, furfuryloxy, and neopentyl into the processing chamber, reacting the siloxane and the at least one oxidizable chemical with an oxidizing gas at a temperature that retains the member in a conformal layer, and converting the member to dispersed voids, as recited in claim 1. Applicants respectfully request withdrawal of the rejection of claim 1 and of claims 16, 18, 21, 26-28, and 35-36, which depend thereon.

With respect to claim 5, the Examiner states that the combination of *Grill* and *Scholsky, et al.* teaches compounds containing both a silicon and an aldehyde. The Examiner further states that it is known that furfuryl, furfuryloxy, and neopentyl compounds are aldehydes and that *Scholsky, et al.* specifically describes furfuryl or furfuryloxy and neopentyl compounds. Applicants agree with the Examiner that *Scholsky, et al.* describes compounds that include furfuryl, furfuryloxy, or neopentyl groups. However, Applicants respectfully submit that furfuryl, furfuryloxy, and neopentyl compounds are not aldehydes as furfuryl (-CH=CH-C(CH_2)=CH-O-)), furfuryloxy (-O-CH_2-(-CH=CH-C=CH-O-), and neopentyl ((CH_3)$_3$-C-C) groups do not include a C=O bond. Furthermore, Applicants note that claim 5 does not require a compound that includes both a silicon and an aldehyde.

Applicants maintain that *Scholsky, et al.* does not teach or suggest an oxidizable chemical that includes silicon and a furfuryl, furfuryloxy, or neopentyl group, as *Scholsky, et al.* does not describe silicon containing compounds. There is no suggestion in *Scholsky, et al.* or the combination of *Grill* and *Scholsky, et al.* of compounds comprising both silicon and a furfuryl, furfuryloxy, or neopentyl group.

Thus, *Grill* in view of *Scholsky, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film, comprising introducing at least one oxidizable chemical comprising a member selected from the group consisting of furfuryl, furfuryloxy, and neopentyl into the processing chamber, wherein the at least one oxidizable chemical comprises silicon, reacting the at least one oxidizable chemical with an oxidizing gas at a temperature that retains the member in a conformal layer, and converting the member to dispersed voids, as recited in claim 5. Applicants respectfully request withdrawal of the rejection of claim 5 and of claims 6-8, 29-32, and 37-38 which depend thereon.

Regarding claim 22, the Examiner states that Applicants' assertion that *Grill*'s failure to name compounds that include a cyclic ring consisting of carbon and oxygen is at odds with the teachings of *Grill* which specify compounds at least in column 3, lines 12-24. Applicants note that column 3, lines 12-24 of *Grill* describe a first precursor selected from molecules containing at least some of Si, C, O, and H atoms, such as tetramethylcyclotetrasiloxane, tetraethylcyclotetrasiloxane, decamethylcyclopenta-

siloxane, and methylsilanes, that may optionally be combined with oxidizing molecules such as O_2 or N_2O. Applicants submit that *Grill*'s broad description of molecules containing at least some of Si, C, O, and H atoms does not teach or suggest an oxidizable chemical comprising a cyclic ring consisting of carbon and oxygen.

Furthermore, *Grill* in view of *Scholsky, et al.* does not suggest or motivate reacting a siloxane with an oxidizable chemical comprising a cyclic ring consisting of carbon and oxygen. While *Scholsky, et al.* describes chemicals comprising a cyclic ring consisting of carbon and oxygen, there is no suggestion or motivation in the combination of *Grill* and *Scholsky, et al.* to react a siloxane with an oxidizable chemical comprising a cyclic ring consisting of carbon and oxygen. As discussed above, there is no motivation to use the precursors of *Scholsky, et al.* in the process of *Grill*.

Therefore, *Grill* in view of *Scholsky, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film, comprising introducing a siloxane comprising two or more silicons and four or more methyl groups bonded to the silicons into a processing chamber, introducing at least one oxidizable chemical comprising a cyclic ring consisting of carbon and oxygen into the processing chamber, reacting the siloxane and the at least one oxidizable chemical with an oxidizing gas at a temperature that retains the cyclic ring in a conformal layer, and converting the cyclic ring to dispersed voids, as recited in claim 22. Applicants respectfully request withdrawal of the rejection of claim 22 and of claims 23-25 and 33-34 which depend thereon.

Regarding claims 35 and 37, the Examiner states that *Grill* teaches a first precursor of Si, C, O, and H to which oxidizing molecules like oxygen can be added. The Examiner notes that using carbon and oxygen together forms carbon dioxide (which may be used as an oxidizing gas) and is taught by *Grill*. Applicants submit that a first precursor of Si, C, O, and H alone or in combination with an oxidizing molecule like oxygen does not teach or suggest using carbon dioxide as an oxidizing gas. Applicants further submit that *Scholsky, et al.*, alone or in combination with *Grill* does not teach or suggest using carbon dioxide as a carrier gas.

Thus, *Grill* in view of *Scholsky, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film, comprising introducing a siloxane comprising two or more silicons and from two to five carbons bonded to the silicons into

a processing chamber, introducing at least one oxidizable chemical comprising a member selected from the group consisting of furfuryl, furfuryloxy, and neopentyl into the processing chamber, reacting the siloxane and the at least one oxidizable chemical with an oxidizing gas at a temperature that retains the member in a conformal layer, and converting the member to dispersed voids, wherein the oxidizing gas is carbon dioxide, as recited in claim 35. Applicants respectfully request withdrawal of the rejection of claim 35.

Grill in view of *Scholsky, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film, comprising introducing at least one oxidizable chemical comprising a member selected from the group consisting of furfuryl, furfuryloxy, and neopentyl into the processing chamber, wherein the at least one oxidizable chemical comprises silicon, reacting the at least one oxidizable chemical with an oxidizing gas at a temperature that retains the member in a conformal layer, and converting the member to dispersed voids, wherein the oxidizing gas is carbon dioxide, as recited in claim 37. Applicants respectfully request withdrawal of the rejection of claim 37.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

Having addressed all issues set out in the Final Office Action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,

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